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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,264	08/02/2005	Takahiro Matsuzawa	05500/LH	1489
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EXAMINER				
MARTIN, LAURA E				
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2853				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/544,264

Applicant(s)

MATSUZAWA ET AL.

Examiner

LAURA E. MARTIN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 7, 9, 11-15, 17-20, 22, 23, 25, 27-31 and 33-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9, 11-15, 17-20, 22, 23, 25, 27-31 and 33-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 15, 17-20, 22, 35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takabayashi et al (JP 2002-307755 A) in view of Bruch et al. (US 2002/0163551 A1).

Takabayashi et al. disclose the following claim limitations:

As per claims 1 and 17: jetting recording ink containing a color material onto a recording medium by a recording head, and colorless ink for improving gloss onto the recording medium by the recording head to perform image formation [0048]; a control unit to control the image forming unit [0038-0050]; and determining an adhered amount of the colorless ink per unit area in response to an adhered amount of the recording ink per unit area [0050].

As per claims 2 and 18: a jetted position of the colorless ink in each said unit block is determined in response to a jetted position of the recording ink in each said unit block [0050].

As per claims 3 and 19: the jetted position of the colorless ink is determined preferentially from a position that is not adjacent to or overlapped on the jetted position of the recording ink (preferentially does not mean necessarily).

As per claims 4 and 20: the adhered amount of colorless ink is increased in a first unit block where the adhered amount of recording ink is a predetermined amount or less than in a second unit block where the adhered amount of, recording ink is more than the predetermined amount [0050].

As per claims 6 and 22: the sum total of the adhered amounts of the colorless ink and the recording ink in the unit area is 2 cc/m² or more [0018].

As per claims 35 and 37: the image data has a gradation and the pixel data is obtained by a halftone process [0049]-[0051].

As per claims 36 and 38: the halftone process uses a dither matrix and each said unit block is the same as a unit block of the dither matrix [0049]-[0051] (the same analysis is being completed on the dither matrix as it is on the unit blocks – Bruch discloses unit blocks of 1mm².)

Takabayashi et al. do not disclose the following claim limitations:

As per claims 1 and 17: each said unit area is set as a block formed of an aggregate of n pixels where n is greater than 1, and is set to have a size of 1 mm square or less, and the adhered amount of the colorless ink for each said unit area is determined such that a sum total of the adhered amounts of ink in the unit area is at least a predetermined amount.

Bruch et al. the following claim limitations:

As per claims 1 and 17: each said unit area is set as a block formed of an aggregate of n pixels where n is greater than 1, and is set to have a size of 1 mm square or less, and the adhered amount of the colorless ink for each said unit area is

determined such that a sum total of the adhered amounts of ink in the unit area is at least a predetermined amount [0041] (there are 23.62 pixels per millimeter squared, this is the predetermined amount of pixels that will adhere to a millimeter squared area).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and apparatus taught by Takabayashi et al. with the disclosure of Bruch et al. in order to provide a high quality image. It is well known in the art to print at resolutions of different amounts.

As per claims 15 and 31: Takabayashi discloses the claimed invention except for the light absorbance change in mixing the recording ink and the colorless ink with each other is less than 5%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the amount of different inks to change the light absorbance, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980)

Claims 1-4, 9, 11-13, 15, 17-20, 25, 27-29, 31, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimoto (US 6877850 B2) in view of Bruch et al. (US 2002/0163551 A1).

Ishimoto et al. disclose the following claim limitations:

As per claims 1 and 17: jetting recording ink containing a color material onto a recording medium by a recording head, and colorless ink for improving gloss onto the

recording medium by the recording head to perform image formation; a control unit to control the image forming unit (column 5, lines 20-41) and determining an adhered amount of the colorless ink per unit area in response to an adhered amount of the recording ink per unit area (column 4, line 65-column 5, line 20).

As per claims 2 and 18: a jetted position of the colorless ink in each said unit block is determined in response to a jetted position of the recording ink in each said unit block (column 4, line 65-column 5, line 20).

As per claims 3 and 19: the jetted position of the colorless ink is determined preferentially from a position that is not adjacent to or overlapped on the jetted position of the recording ink (preferentially does not mean necessarily).

As per claims 4 and 20: the adhered amount of colorless ink is increased in a first unit block where the adhered amount of recording ink is a predetermined amount or less than in a second unit block where the adhered amount of recording ink is more than the predetermined amount (column 4, line 65-column 5, line 20).

As per claims 9 and 25: a jetted position of the colorless ink jetted onto each said unit block is determined preferentially from a pixel in which the adhered amount of the recording ink is smaller (column 4, line 65-column 5, line 20).

As per claims 11 and 27: the recording ink contains fine particles (column 3, lines 37-55).

As per claims 12 and 28: the recording medium includes a micro-porous recording medium (column 1, lines 18-32).

As per claims 13 and 29: a surface layer of the recording medium contains a thermoplastic resin (column 9, lines 1-42).

As per claims 33 and 34: the recording ink is an aqueous pigment as said color material, and the colorless ink is an aqueous ink containing a dispersed resin and substantially no pigment (column 3, lines 5-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and apparatus taught by Ishimoto et al. with the disclosure of Bruch et al. in order to provide a high quality image. It is well known in the art to print at resolutions of different amounts.

As per claims 15 and 31: Ishimoto et al. disclose the claimed invention except for the light absorbance change in mixing the recording ink and the colorless ink with each other is less than 5%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the amount of different inks to change the light absorbance, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980)

Claims 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takabayashi et al. (JP 2002-307755 A) in view of Onishi et al. (US 2001/0015745 A1).

Takabayashi et al. disclose the following claim limitations:

Claims 1 and 17.

Takabayashi et al. do not disclose the following claim limitations:

As per claims 7 and 23: the sum total of the adhered amounts of the colorless ink and the recording ink in the unit area is less than 13 cc/m^2 .

Onishi et al. disclose the following claim limitations:

As per claims 7 and 23: the sum total of the adhered amounts of the colorless ink and the recording ink in the unit area is less than 13 cc/m^2 [0018].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the recording method taught by Takabayashi et al. with the disclosure of Onishi et al. in order to provide a high quality ink.

Claims 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimoto et al. (US 6877850 B2) in view of Onishi et al. (US 2001/0015745 A1).

Ishimoto et al. disclose the following claim limitations:

Claims 1 and 17.

Ishimoto et al. do not disclose the following claim limitations:

As per claims 7 and 23: the sum total of the adhered amounts of the colorless ink and the recording ink in the unit area is less than 13 cc/m^2 .

Onishi et al. disclose the following claim limitations:

As per claims 7 and 23: the sum total of the adhered amounts of the colorless ink and the recording ink in the unit area is less than 13 cc/m^2 [0018].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the recording method taught by Ishimoto et al. with the disclosure of Onishi et al. in order to provide a high quality ink

Claims 14 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimoto et al. (US 6877850 B2) in view of Shigemura (US 2001/0017642 A1).

Ishimoto et al. disclose the following claim limitations:

Claims 13 and 29.

Ishimoto et al. do not disclose the following claim limitations:

As per claims 14 and 30: a fixing process including heating or pressurization is implemented for the recording medium on which the recording ink and the colorless ink are jetted.

Shigemura discloses the following claim limitations:

As per claims 14 and 30: a fixing process including heating or pressurization is implemented for the recording medium on which the recording ink and the colorless ink are jetted [0204].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Ishimoto with the disclosure of Shigemura in order to provide a higher quality image.

Response to Arguments

Applicant's arguments filed 12/12/08 have been fully considered but they are not persuasive.

Applicant argues that the relied upon art discloses "colorless ink is adhered to dots to which recording ink is not adhered and the adhered amount of ink in each dot is the same in the other dots... Takabayashi teaches applying colorless ink for glossiness only to places where the recording ink is not adhered." Examiner notes that the claim language "in response to an adhered amount of recording ink" is broad and does not limit the claim to applying colorless ink to places where the recording ink has been adhered. If one prints colorless ink only where the ink has not been printed, this too is printing in response to the adhered amount of recording ink, as it must be determined where the ink is printed before printing the colorless ink in other regions. Thus, the claim language must be further limited to satisfy the applicant's present argument.

Applicant argues that "Bruch et al... makes no mention of affecting the amount of colorless ink ejected with respect to the size of an area to which the ink is adhered." It is noted that the amount of colorless ink being controlled with respect to the amount of color ink is disclosed in Takabayashi and Ishimoto as explained above; regardless of how the unit blocks are divided, (for Takabayashi this limitation will still be fulfilled as the colorless ink is placed in whatever space the colored ink is not printed). Takabayashi and Ishimoto modified with Bruch in order to disclose the specific block size with a minimum of one pixel being within the block. It would have been obvious to one of ordinary skill in the art at the time of the invention that the data in Takabayashi and Ishimoto could be broken down into such block sizes as it is well known in the art to

collect data from different sizes of block areas on the image. Collecting data from such a small area would allow for a higher quality image, as the size that is being analyzed is small, leading to precision of the image.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **LAURA E. MARTIN** whose telephone number is (571)272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen D. Meier** can be reached on (571) 272-2149. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. E. M./
Examiner, Art Unit 2853

Laura E. Martin

/Manish S. Shah/
Primary Examiner, Art Unit 2853